




Facilities Division Loading Dock Safety Self-Assessment

*Lawrence Berkeley National Laboratory
Janice Sexson, Heather Pinto*

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Jennifer Ridgeway
Facilities Division Director

9/12/13

Date

Executive Summary

The Facilities Division enables world class science through the maintenance and construction of the laboratory infrastructure, logistics support, and energy management in a manner that maintains the highest level of integrity by ensuring the safety of its workers, listening to the voice of the customers, and delivering exceptional services through teamwork and efficient operations. The Facilities Division uses a tailored risk-based approach to assess its safety program effectiveness.

Logistically, the loading dock is a key component in shipping, receiving, and transporting the materials and goods essential to all aspects of the laboratory. The goal of this Self-Assessment was to monitor and self-examine loading dock safety.

The Self-Assessment Team consists of the Facilities Safety Coordinator and Facilities Process Excellence Manager. A total of 10 individuals were interviewed between June and August 2013. In addition to interviews, the Self-Assessment Team conducted benchmarking with other national laboratories and monitored the dock area traffic patterns and behaviors.

Results of the interviews indicate that customer access to the dock is unrestricted and has placed customers and dock employees at risk. The employees self-identified the narrowness of the dock as a risk in maneuvering the forklift.

There were two findings associated with this review, three observations, one noteworthy practice, and six recommended correction actions (see page 11).

Introduction

The goal of this Self-Assessment was to monitor and self-examine loading dock safety. This review addressed all five ISM core values as they pertain to work performed in the loading dock area.

1. **Define the Work** – Employees were interviewed specifically to discuss their job duties in accordance with moving about the loading dock area.
2. **Analyze the Hazards** – Employees were asked to describe the hazards they and their customers encounter in the loading dock area.
3. **Develop Controls** – This Self-Assessment will determine what, if any, further controls are necessary to help ensure customer and employee safety.
4. **Perform the Work** – This Self-Assessment examined current and past work practices as they relate to traffic patterns and loading dock safety.
5. **Obtain Feedback** – Feedback was gained during the interviews and conversations with employees, supervisors, and work leads.

Definitions

Trailer Creep – The motion of a lift truck entering and exiting a trailer can cause separation between the trailer and the dock.

Focus Area Description

The Self-Assessment Team interviewed 10 employees including supervisors and work leads to determine:

- Why safety precautions previously set in place are not currently in use?
- What is the safety impact of customers accessing the loading dock area and have employees witnessed any safety issues?
- What, if any, employee duties would be impacted by restricting customer access?
- What is the frequency and necessity for customers to access the loading dock?
- Have there been any near misses on the loading dock?
- Have the employees in the work area used their stop work authority?
- Are there any existing policies about customer access on the loading dock?
- Have the employees witnessed any vendors performing unsafe acts during deliveries or packages pickups?
- Are there procedures in place to prevent trailer creep?
- What are the employee concerns about forklift use and maneuverability?
- Is there a process for handling broken chemical containers?

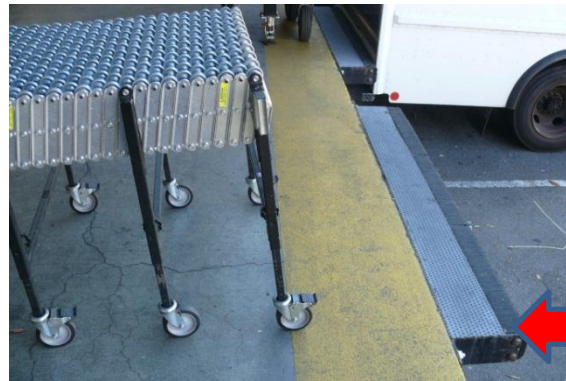
Current Requirements

The Lawrence Berkeley National Laboratory requirements for loading dock safety are outlined in the ES&H Manual (PUB 3000) Chapter 28, Forklifts and Other Powered Industrial Trucks. The Self-Assessment Team found no deviations from this requirement.

Assessment

Customer Access

The Self-Assessment Team observed pedestrian traffic patterns and interviewed Facilities employees who work in and around the Building 69 loading dock area. Each employee interviewed expressed concerns about customer safety on the dock and provided examples of near hits. Employees spoke of customers darting behind or in front of operating forklifts. One employee observed customers stepping out on to the dock bumper to get past a fully extended conveyor belt.



Dock Bumpers

Photo 1 Dock bumper and conveyor belt

Customers have been known to jump on and off the dock. The dock ranges in height from 32 to 43 inches. During the field observation the Self-Assessment Team witnessed a customer, although within 2 feet of the staircase, jump off the dock. There are three sets of stairs to access the dock, and customers use two of these routinely. One set of stairs is located in front of the office area and to the side of the dock. However the other two sets of stairs require walking through the truck traffic to reach the dock, and then arriving in the middle of the active dock area.



Photo 2 Building 69 Loading Dock

The Self-Assessment Team monitored dock activities during peak business hours. During this period, nine customers accessed the loading dock area. One person was seen to wander on and off the dock, with no apparent purpose, while talking on his cell phone. This person exited the middle set of stairs, between two running trucks. Attempts by the team to dissuade this behavior had no results, as the individual would not speak to the Self-Assessment Team insisting he was “on the phone” and should not be interrupted. Dock employees indicated that they too have occasionally experienced resistance from customers during attempts to redirect pedestrian traffic. Currently there is no policy preventing access to the dock by non-shipping/receiving employees.



Photo 3 Individual exiting dock between running trucks while on phone

Of the nine customers witnessed on the dock, five headed directly to Shipping. The remainder had business with the Receiving group. None of the Shipping customers spoke to the Shipping Material Specialist for more than one minute, and none of the five customers required assistance with shipping specifics. During interviews the Shipping Material Specialist stated that he averages six customers daily, only about three of whom would need to speak with him directly. This indicates that the majority of shipping customers do not require direct interaction with the Shipping Material Specialist.

In 2010 the Facilities Division redesigned the Shipping/Receiving area, reconfiguring spaces to minimize the lifting of packages by employees. A conveyor system was added that could be extended out to reach delivery trucks as needed. At the time of the 2010 redesign, a folding barrier was purchased with the intent of prohibiting customer access to the loading dock. Signage was created directing customers into the Transportation Office located to the left of the stairway. At the start this Self-Assessment, it was discovered that the barrier was not in use and the signage had been altered. Customers are now directed through the dock area to access the Shipping and Receiving areas.

Employees were asked why the barricade was no longer in use. The majority recall that the barricade was only in use for a short time, if ever. One employee remembers the barricade being an obstacle to the Transportation/Receiving office employees as they walked back and forth to the Shipping and Receiving area. When the barricade was moved it was seldom put back in place.



Photo 4 Out of use barricade



Photo 5 Altered signage

Interviews revealed a number of reasons why the original plan restricting customer access to the loading dock was abandoned:

- The barricade was cumbersome to use.
- The office design logically funneled customers to the Transportation Administrative Assistant's desk. During the self-assessment interview, the Transportation Administrative Assistant expressed frustration regarding handling customers in the office, specifically customers who were there for Shipping or Receiving needs.
- The Receiving Administrative Assistant was relocated to the Receiving area which left only one administrative person available to receive incoming customers in the office. This frequently left the office unstaffed.
- The Transportation Administrative Assistant arranged for the signage to be altered, redirecting customers across the dock for Shipping and Receiving service.

The self-assessment results coupled with a recent event where a customer fell off the dock while chatting with dock employees, indicate that customer access to the loading dock should be prohibited (with exceptions for trained material handlers from other divisions and vendor delivery drivers). The dock can at times be a hub of activity with deliveries, forklift traffic, and materials in motion. The number of customers to the Shipping/Receiving areas could easily be managed away from the often bustling dock area. Customers should be triaged in the office and either met in the office by Shipping/Receiving staff, or routed through the security gate near the restrooms, along the back wall, away

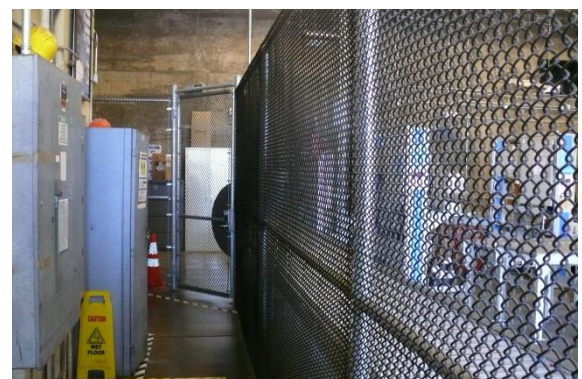


Photo 6 Shipping/Receiving Security Gate

from the dock and Receiving activities (see Appendix A). Physical barriers that are easy to maneuver but are clearly restrictive should be installed on both back sets of stairs and at the entrance to the active section of the dock (Appendix A).

Forklift Safety

When asked what employees thought would cause the next accident many employees brought up forklift safety due to the dock size. The width of the dock is 14 feet. Turning the forklift involves maneuvering the vehicle back and forth a number of times (similar to a 3-point-turn). One employee who regularly uses the forklift stated that sometimes he notices that “*man* I get really close to the edge” and suggested that a standing forklift with a tighter turning radius would be a safer option for the small dock. When asked about this option some were concerned that the handling of a standing forklift was very different and could create a new set of hazards. One of the concerns about having a standing forklift was the lifting capacity. It was stated that dock personnel could not function as well using a forklift with any lower lifting capacity. There is a process for handling heavier loads off the dock using a larger forklift located nearby.

Not one of the employees knew the exact lifting capacity of the current forklift. The lift capacity is clearly written on the side of the forklift in large letters, and employees know where to find it. However, the employees had to guess and most were off by at least a thousand pounds. This may indicate that lifting calculations are performed by guesstimating and load testing rather than by reading the bill of lading.



Photo 7 1994 Mitsubishi Forklift

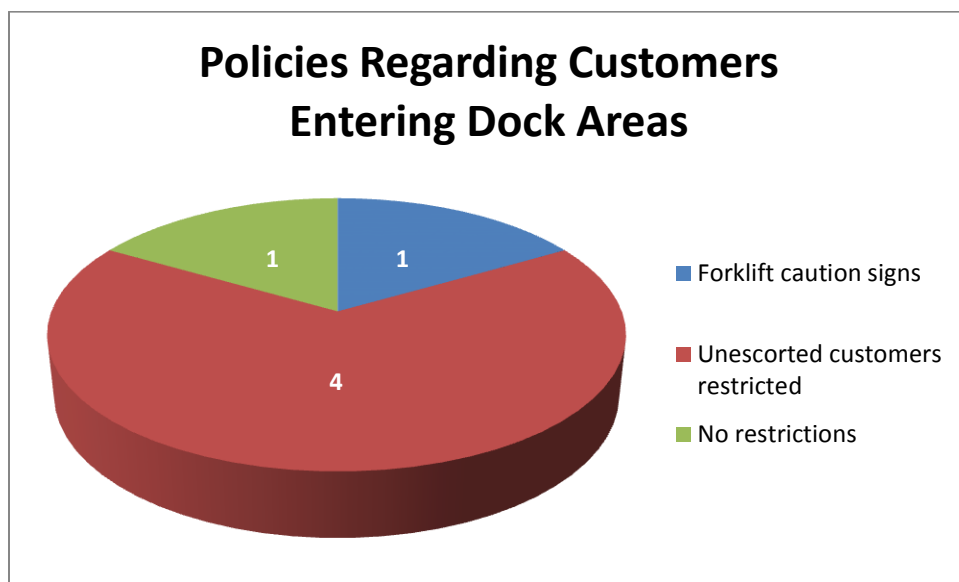
The current forklift in use is a 1994 Mitsubishi. The Facilities Division should evaluate whether a forklift more suitable for the loading dock size should be purchased. This consideration should include maneuverability, safe handling options, and lifting capacity. Standing forklifts have the capacity of lifting 4,000 pounds. Larger loads could be handled using the large forklift on the ground, which is established procedure.

Chocking Trucks

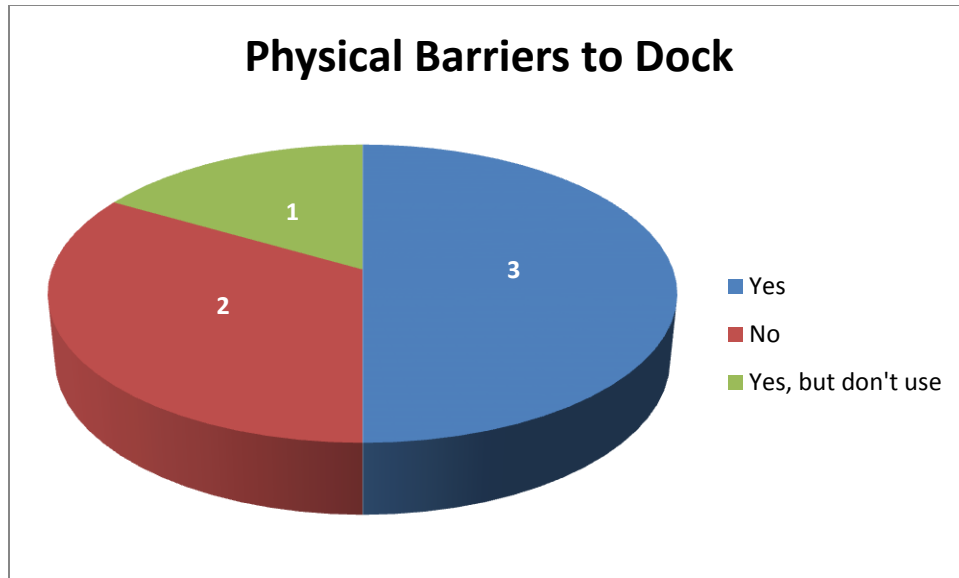
During interviews with the staff, the use of wheel chocks was discussed and most employees did not perceive the lack of wheel chocks by vendors as a hazard. All employees agreed that wheel chocks were used whenever a forklift was required to enter a trailer, but for standard deliveries by vendors using a van type of truck, wheel chocks were not required, which is consistent with LBNL policy. The Self-Assessment Team observed all LBNL drivers using wheel chocks on LBNL vehicles. During the dock monitoring it was noted that all nine vendor trucks (van style trucks) delivering during the observation period did not chock their wheels. No trailer trucks delivered during the Self-Assessment Team observation period.

Benchmarking

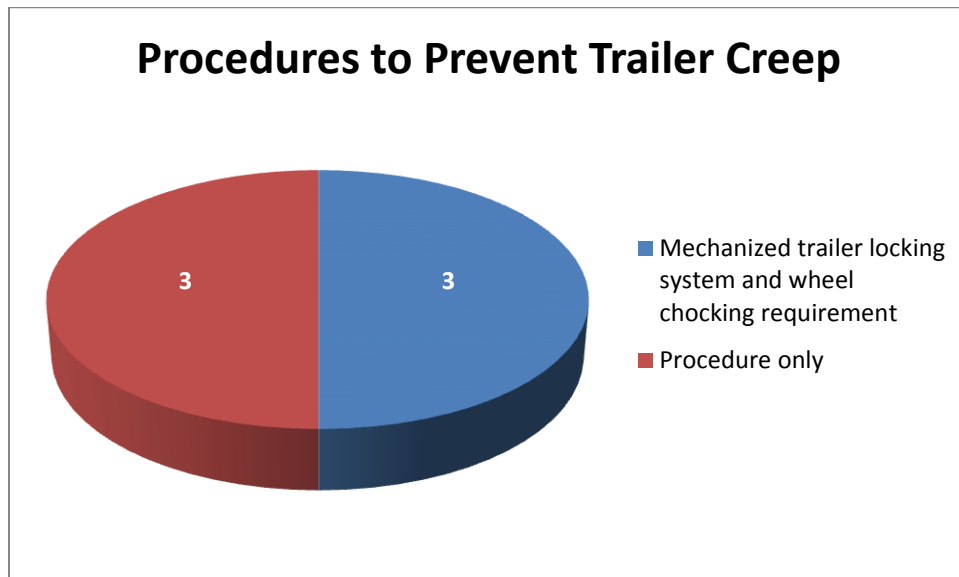
The Self-Assessment Team sent surveys to a number of Shipping/Receiving Departments at other national laboratories and received six responses for benchmarking. There is a commonality in issues faced by each of these laboratories in regards to loading dock safety. The results are as follows:



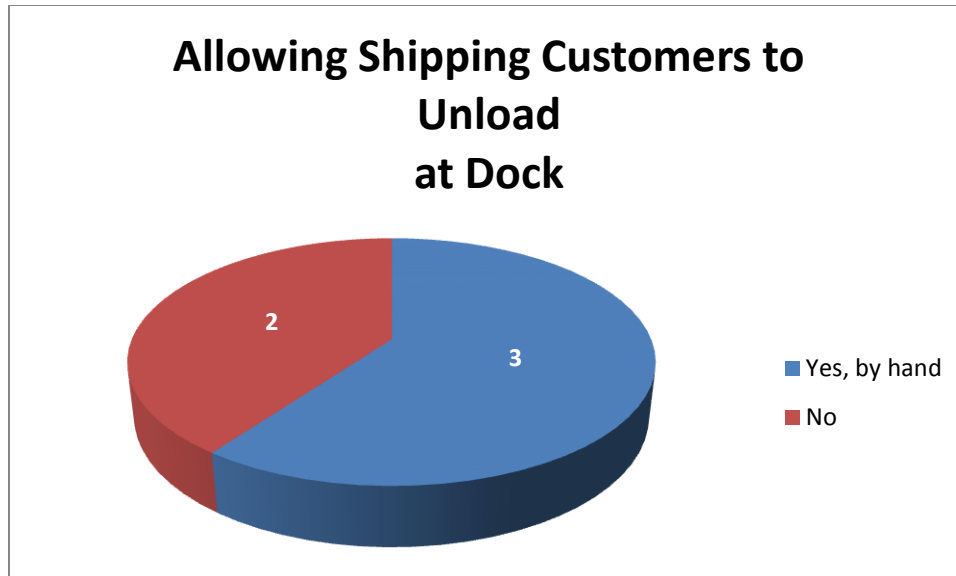
Of the six labs that responded, four do not allow customers on the dock without an escort, one relies on signs cautioning that forklifts are in use, and the other lab has no restrictions on customers entering the dock. Berkeley Lab currently relies on cautionary forklift signs and PPE requirements (closed toe shoes, long pants) that are difficult to enforce for non-dock staff, but does not restrict access to anyone.



Berkeley Lab does not physically block access to the dock. Of the labs that responded, half use physical barriers to restrict dock access, one has but does not use the physical barrier, and two do not have any physical barriers. Those labs that have physical barriers in place to keep customers off the dock either have phone or bell systems in place, or have designated personnel available to assist customers.



All of the responders have procedures in place regarding the use of wheel chocks to prevent trailer creep when using a forklift or pallet jack inside a vehicle. Half have mechanized trailer locking systems in place to ensure trailer creep does not occur. Berkeley Lab has a procedure in place regarding the use of wheel chocks to prevent trailer creep that is consistent with the other national laboratories.



Of the responders three expected shipping customers to unload smaller packages on their own, while two did not allow customers to unload packages of any size at the dock. One laboratory did not respond to this question. LBNL currently allows customers to unload any size package at the dock and will provide assistance if necessary. None of the responders or Berkeley Lab allows customers to use the forklifts.

Additional Concerns

The team identified a number of additional concerns during the self-assessment review:

- The dry ice locker has a worn door seal which allows a buildup of ice around the door that drips water onto the dock below. A mat has been placed under the leak but does not always fully contain the water/ice. The door seal should be repaired.
- Customers coming to pick up dry ice do not always have proper PPE, specifically gloves. Permanent PPE should be made available at the dry ice locker in a clearly identified location.



Photo 8 Dry Ice Locker

Assessment Results

Findings

The following findings were discovered during the self-assessment process:

- Unrestricted access to the dock places customers and employees at risk of injury.
- The size of the current forklift used on the dock places employees at risk during turns when close to the dock edge.

Observations

The following observations were noted during the self-assessment process:

- The door seal on the dry ice locker is missing, creating a slip hazard.
- Customers arrive to pick up dry ice without proper PPE putting them at risk for injury.
- Employees using the forklift were unable to quote the lifting capacity of the forklift.

Noteworthy

The following is a noteworthy finding indicating Facilities Division excellence.

During the interview process it was revealed that the dock can become quite slippery during rains due to a build-up of oil and rubber from forklifts, becoming a hazard to those walking on the dock as well as using the forklift. By using the air curtains installed above the roll-up doors, they have mitigated the hazard allowing the dock to dry more quickly.

Recommended Corrective Actions

The following is a list of recommended corrective actions.

- Develop a policy restricting dock access to LBNL Material Handlers, Vendor Delivery Drivers, and Shipping/Receiving/Transportation employees.
- Design a customer process for Shipping/Receiving that prohibits dock access:
 - Include barriers to prevent customers from accessing the dock area without escort.
 - Place chains/barricade at stair and dock entrances preventing customer access.
 - Include signage informing customers that access is restricted.
 - Set up a customer service triage area by use of either a bell/phone system to alert staff, rescheduling staff to ensure service desk coverage, or develop an alternate path of travel skirting the dock area.
 - Modify signage to reflect changes.

- Require loading dock staff replace barriers after each use.
- Evaluate replacing the existing 19 year old forklift with a forklift more suitable for the loading dock size:
 - Considerations should include maneuverability
 - Safe Handling options
 - Lifting capacity
- Replace the door seal on the dry ice locker.
- Develop a process for customers arriving to pick up dry ice who do not have PPE:
 - Either restricting use or providing PPE
- Ensure that employees who use the forklift know the lifting capacity of the forklift and the weight of the object they are attempting to lift prior to the lift.

Appendix A

Current and proposed dock pedestrian traffic “maps.”

